

AMENDMENT(S) TO THE CLAIMS:

The following listing of claims will replace all prior versions, and listings, of claims on the application. All claims are set forth below with one of the following annotations.

- (Original): Claim filed with the application.
- (Currently amended): Claim being amended in the current amendment paper.
- (Canceled): Claim cancelled or deleted from the application. No claim text is shown.
- (Withdrawn): Claim still in the application, but in a non-elected status.
- (New): Claim being added in the current amendment paper.
- (Previously presented): Claim added or amended in an earlier amendment paper.
- (Not entered): Claim presented in a previous amendment, but not entered or whose entry status unknown. No claim text is shown.

1.-15. (canceled)

16. (Previously presented) A method of operating a wireless receiver to obtain a soft decision value for a particular bit of a multibit phase shift key symbol, said method comprising:

receiving one or more signals in a wireless receiver as a result of a transmission of a signal in which the multibit phase shift key symbol is encoded;

forming a received estimate of said multibit phase shift key symbol from the received one or more signals;

obtaining a first angular difference between polar coordinates of

said received estimate and polar coordinates of a nearest in angle ideal symbol having zero as a value for said particular bit;

obtaining a second angular difference between polar coordinates of said received estimate and polar coordinates of a nearest in angle ideal symbol having one as a value for said particular bit; and

forming a soft decision value for said particular bit based on said first angular difference and said second angular difference.

17. (Original) The method of claim 16 wherein said soft decision value is formed further based on an amplitude of said received estimate, said amplitude acting as a confidence value.
18. (Original) The method of claim 16 wherein said phase shift key symbol comprises a detection symbol in a DPSK system.
19. (Currently amended) A method of operating a wireless receiver for receiving differential encoded OFDM signals via multiple antennas to obtain a soft decision value for a particular bit of a multibit phase shift key symbol, said method comprising:

receiving one or more differential encoded OFDM signals in the wireless receiver via the multiple antennas as a result of a transmission of a differential encoded OFDM signal in which the multibit phase shift key symbol is differentially encoded;

forming a received estimate of said multibit phase shift key symbol from the received one or more signals; and

forming a soft decision value for said particular bit based on angular differences between said received estimate and ideal values for said multibit phase shift key symbol.
20. (New) An apparatus comprising:

a receiver including multiple antennas, the receiver operative to receive differential encoded OFDM signals via the multiple antennas as a result of a transmission of a differential encoded OFDM signal in which the multibit phase shift key symbol is encoded;

a symbol estimator operative to form a received estimate of said multibit phase shift key symbol from the received one or more signals;

a soft decision processor coupled to the symbol estimator and operative to obtain for a particular bit of the multibit phase shift key symbol a first angular difference between polar coordinates of said received estimate and polar coordinates of a nearest in angle ideal symbol having zero as a value for said particular bit; to obtain for said particular bit a second angular difference between polar coordinates of said received estimate and polar coordinates of a nearest in angle ideal symbol having one as a value for said particular bit; and operative to form a soft decision value for said particular bit based on said first angular difference and said second angular difference; and

a decoder coupled to the soft decision processor.